

Docket No.: 50179-087

PATENT

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Application of

Robyn Joyce RUSSELL, et al.

Serial No.:

(Divisional of Serial No. 09/068,960)

Group Art Unit:

Filed: February 06, 2001

Examiner:

For: MALATHION CARBOXYLESTERASE

**TRANSMITTAL OF FORMAL DRAWINGS**

Commissioner for Patents

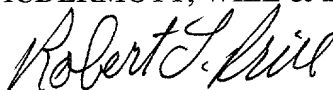
Washington, DC 20231

Sir:

Sixteen (16) sheets of formal drawings are submitted herewith as filed in parent application Serial No. 09/068,960.

Respectfully submitted,

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|              |  |     |
|--------------|--|-----|
| SEQ ID NO:8  | M N F N V S L M E K L K W K I K C I E N                          | 20  |
| SEQ ID NO:10 | .....  | 60  |
| SEQ ID NO:7  | ATGAATTTC AACGTTAGTTTGATGGAGAAATTTAAAAATGGAAGATTAAATGCATTGAAAAAT |     |
| SEQ ID NO:1  | .....  |     |
| SEQ ID NO:3  | .....  |     |
| SEQ ID NO:5  | .....  |     |
| SEQ ID NO:9  | .....  |     |
| Lc743        |  |     |
| RM8con       |  |     |
| SEQ ID NO:1  | K E L N Y R L T T N E T V V A E T E Y G                          | 40  |
| SEQ ID NO:3  | .....  | 120 |
| SEQ ID NO:5  | AAGTTTAAACTATCGTTTAACTACCAATGAAACGGTGGTAGCTGAAACTGAATATGGC       |     |
| SEQ ID NO:9  | .....  |     |
| Lc743        |  |     |
| RM8A         | .....  |     |
| RM8B         | .....  |     |
| RM8C         | .....  |     |
| RM8con       | .....  |     |
| Lc743        |  |     |
| RM8con       |  |     |
| SEQ ID NO:1  | K V K G V K R L T V Y D D S Y Y S F E G                          | 60  |
| SEQ ID NO:3  | .....  | 121 |
| SEQ ID NO:5  | AAAGTGAAAGGCGTTAAACGTTTAACTGTACGATGATTCCTACTACAGTTTGGAGGT        |     |
| SEQ ID NO:9  | .....  |     |
| Lc743        |  |     |
| RM8A         | .....  |     |
| RM8B         | .....  |     |
| RM8C         | .....  |     |
| RM8con       | .....  |     |
| Lc743        |  |     |
| RM8con       |  |     |
| SEQ ID NO:1  | I P Y A Q P P V G E L R F K A P Q R P T                          | 80  |
| SEQ ID NO:3  | .....  | 240 |
| SEQ ID NO:5  | ATACCGTAGGCCCAACCGCCAGTGGGTGAGCTGAGATTAAACGACCCGACGACCAACA       |     |
| SEQ ID NO:9  | .....  |     |
| Lc743        |  |     |
| RM8A         | .....  |     |
| RM8B         | .....  |     |
| RM8C         | .....  |     |
| RM8con       | .....  |     |

FIG. 1A

|        |   |     |
|--------|---|-----|
| Lc743  | P W D G V R D C C N H K D K S V Q V D F                       | 100 |
| Rm8con | - - - - + - - - + - - - + - - - + - - - + - - - + - - - +     | 241 |
| Lc743  | CCCTGGGATGGTGCCTGATTGTTCGAATCATAAAGATAAAGTCAGTGCAAGTTGATTTT   | 300 |
| Rm8A   | . . . . .   |     |
| Rm8B   | . . . . .   |     |
| Rm8C   | . . . . .   |     |
| Rm8con | . . . . .   |     |
| Lc743  | I T G K V C G S E D C L Y L S V Y T N N                       | 120 |
| Rm8con | - - - - + - - - + - - - + - - - + - - - + - - - + - - - +     | 301 |
| Lc743  | ATAACGGCAAAGTGTGGCTCAGAGGATTGCTATACCTAAGTGCTATACGAATAAT       | 360 |
| Rm8A   | . . . . .   |     |
| Rm8B   | . . . . .   |     |
| Rm8C   | . . . . .   |     |
| Rm8con | . . . . .   |     |
| Lc743  | L N P E T K R P V L V Y I H G G G F I I                       | 140 |
| Rm8con | - - - - + - - - + - - - + - - - + - - - + - - - + - - - +     | 361 |
| Lc743  | CTAAATCCCGAAACTAAACGTCCTTAGTATACATACATGTTGGTGGTTTATTATC       | 420 |
| Rm8A   | . . . . .   |     |
| Rm8B   | . . . . .   |     |
| Rm8C   | . . . . .   |     |
| Rm8con | . . . . .   |     |
| Lc743  | G E N H R D M Y G P D Y F I K K D V V                         | 160 |
| Rm8con | - - - - + - - - + - - - + - - - + - - - + - - - + - - - +     | 421 |
| Lc743  | GGTGAAAATCATCGTGATATGTATGGTCCTGATTATTTTCATTA AAAAGGATGTGGTGTG | 480 |
| Rm8A   | . . . . .   |     |
| Rm8B   | . . . . .   |     |
| Rm8C   | . . . . .   |     |
| Rm8con | . . . . .   |     |

FIG. 1B.

|        |  |     |
|--------|--|-----|
| Lc743  | I N I Q Y R L G A L G F L S L N S E D L                        | 180 |
| Rm8con | -----+-----+-----+-----+-----+                                 | 540 |
| Lc743  | ATTAACATACAATATCGTTTGGAGCTCTAGGTTTCTAAGTTTAAATTTCAGAAGACCTT    |     |
| Rm8A   | .....  |     |
| Rm8B   | .....  |     |
| Rm8C   | .....  |     |
| Rm8con | .....  |     |
| Lc743  | N V P G N A G L K D Q V M A L R W I K N                        | 200 |
| Rm8con | -----+-----+-----+-----+-----+                                 | 600 |
| Lc743  | AATGTGCCCGGTAATGCCGGCCTTAAAGATCAAAGTCATGGCCCTTGCGTTGGATTAAAAAT |     |
| Rm8A   | .....  |     |
| Rm8B   | .....  |     |
| Rm8C   | .....  |     |
| Rm8con | .....  |     |
| Lc743  | N C A N F G G N P D N I T V F G E S A G                        | 220 |
| Rm8con | -----+-----+-----+-----+-----+                                 | 660 |
| Lc743  | AATTGGCCCAACTTTGGTGGCAATCCCGATAATATTACAGTCTTTGGTGAAAGTGCCGGT   |     |
| Rm8A   | .....  |     |
| Rm8B   | .....  |     |
| Rm8C   | .....  |     |
| Rm8con | .....  |     |
| Lc743  | A A S T H U M M L T E Q T R G L F H R G                        | 240 |
| Rm8con | -----+-----+-----+-----+-----+                                 | 720 |
| Lc743  | GCTGCCTCTACCCACTACATGATGTTAACCGAACAAACTCGCGGTCTTTCCATCGTGTT    |     |
| Rm8A   | .....  |     |
| Rm8B   | .....  |     |
| Rm8C   | .....  |     |
| Rm8con | .....  |     |

[illegible]

FIG. 1D.

|        |      |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
|--------|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Lc743  | A    | D   | C   | V   | L   | P   | K   | H   | P   | R   | E   | M   | V   | K   | T   | A   | W   | G   | N   | S   | 340  |
| Rm8con | 961  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1020 |
| Lc743  | G    | C   | T   | G   | T   | T   | A   | C   | C   | A   | A   | C   | A   | T   | C   | C   | T   | G   | T   | T   | 1020 |
| Rm8A   | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1020 |
| Rm8B   | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1020 |
| Rm8C   | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1020 |
| Rm8con | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1020 |
| Lc743  | I    | P   | T   | M   | M   | G   | N   | T   | S   | Y   | E   | G   | L   | F   | F   | T   | S   | I   | L   | K   | 360  |
| Rm8con | 1021 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1080 |
| Lc743  | A    | T   | A   | C   | C   | A   | C   | T   | A   | T   | C   | A   | T   | G   | A   | G   | G   | T   | C   | T   | 1080 |
| Rm8A   | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1080 |
| Rm8B   | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1080 |
| Rm8C   | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1080 |
| Rm8con | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1080 |
| Lc743  | Q    | M   | P   | M   | L   | V   | K   | E   | L   | E   | T   | C   | V   | N   | F   | V   | P   | S   | E   | L   | 380  |
| Rm8con | 1081 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1140 |
| Lc743  | C    | A   | A   | T   | G   | C   | T   | A   | T   | G   | T   | A   | A   | G   | A   | A   | T   | T   | G   | T   | 1140 |
| Rm8A   | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1140 |
| Rm8B   | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1140 |
| Rm8C   | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1140 |
| Rm8con | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1140 |
| Lc743  | A    | D   | A   | E   | R   | T   | A   | P   | E   | T   | L   | E   | M   | G   | A   | K   | I   | K   | K   | A   | 400  |
| Rm8con | 1141 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1200 |
| Lc743  | G    | C   | T   | G   | A   | C   | G   | C   | C   | C   | C   | C   | A   | G   | A   | C   | T   | T   | G   | G   | 1200 |
| Rm8A   | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1200 |
| Rm8B   | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1200 |
| Rm8C   | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1200 |
| Rm8con | ---  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 1200 |

FIG. 1E

[illegible]

•  
H  
H  
H  
H

[illegible]

THE







| Variable                        | Mean                | Standard deviation | Minimum | Maximum |
|---------------------------------|---------------------|--------------------|---------|---------|
| Age                             | 34.2                | 10.5               | 20      | 65      |
| Gender                          | Male 78%            |                    |         |         |
| Marital status                  | Married 65%         |                    |         |         |
| Education                       | High school 45%     |                    |         |         |
| Occupation                      | Manager 30%         |                    |         |         |
| Income                          | \$3,500             | \$1,200            | \$1,000 | \$8,000 |
| Health status                   | Good 70%            |                    |         |         |
| Exercise frequency              | 3 times/week        | 2                  | 0       | 5       |
| Diet quality                    | High 60%            |                    |         |         |
| Stress level                    | Medium 55%          |                    |         |         |
| Sleep quality                   | Good 68%            |                    |         |         |
| Alcohol consumption             | Low 75%             |                    |         |         |
| Tobacco use                     | Non-user 80%        |                    |         |         |
| Family size                     | 2.5                 | 1.2                | 1       | 5       |
| Home ownership                  | Owned 72%           |                    |         |         |
| Neighborhood safety             | Safe 85%            |                    |         |         |
| Access to healthcare            | Yes 90%             |                    |         |         |
| Health insurance                | Private 60%         |                    |         |         |
| Healthcare utilization          | Annual check-up 70% |                    |         |         |
| Healthcare costs                | \$500               | \$200              | \$100   | \$1,000 |
| Healthcare satisfaction         | High 65%            |                    |         |         |
| Healthcare accessibility        | Good 78%            |                    |         |         |
| Healthcare quality              | High 80%            |                    |         |         |
| Healthcare affordability        | High 70%            |                    |         |         |
| Healthcare availability         | High 85%            |                    |         |         |
| Healthcare effectiveness        | High 88%            |                    |         |         |
| Healthcare efficiency           | High 90%            |                    |         |         |
| Healthcare equity               | High 82%            |                    |         |         |
| Healthcare transparency         | High 85%            |                    |         |         |
| Healthcare accountability       | High 88%            |                    |         |         |
| Healthcare responsiveness       | High 90%            |                    |         |         |
| Healthcare patient-centeredness | High 92%            |                    |         |         |
| Healthcare safety-net           | High 95%            |                    |         |         |
| Healthcare quality improvement  | High 98%            |                    |         |         |
| Healthcare innovation           | High 99%            |                    |         |         |
| Healthcare leadership           | High 100%           |                    |         |         |
| Healthcare vision               | High 100%           |                    |         |         |
| Healthcare mission              | High 100%           |                    |         |         |
| Healthcare values               | High 100%           |                    |         |         |
| Healthcare culture              | High 100%           |                    |         |         |
| Healthcare climate              | High 100%           |                    |         |         |
| Healthcare environment          | High 100%           |                    |         |         |
| Healthcare community            | High 100%           |                    |         |         |
| Healthcare network              | High 100%           |                    |         |         |
| Healthcare system               | High 100%           |                    |         |         |
| Healthcare organization         | High 100%           |                    |         |         |
| Healthcare management           | High 100%           |                    |         |         |
| Healthcare governance           | High 100%           |                    |         |         |
| Healthcare regulation           | High 100%           |                    |         |         |
| Healthcare policy               | High 100%           |                    |         |         |
| Healthcare strategy             | High 100%           |                    |         |         |
| Healthcare plan                 | High 100%           |                    |         |         |
| Healthcare program              | High 100%           |                    |         |         |
| Healthcare service              | High 100%           |                    |         |         |
| Healthcare product              | High 100%           |                    |         |         |
| Healthcare outcome              | High 100%           |                    |         |         |
| Healthcare impact               | High 100%           |                    |         |         |
| Healthcare contribution         | High 100%           |                    |         |         |
| Healthcare legacy               | High 100%           |                    |         |         |
| Healthcare reputation           | High 100%           |                    |         |         |
| Healthcare brand                | High 100%           |                    |         |         |
| Healthcare identity             | High 100%           |                    |         |         |
| Healthcare image                | High 100%           |                    |         |         |
| Healthcare perception           | High 100%           |                    |         |         |
| Healthcare attitude             | High 100%           |                    |         |         |
| Healthcare belief               | High 100%           |                    |         |         |
| Healthcare opinion              | High 100%           |                    |         |         |
| Healthcare view                 | High 100%           |                    |         |         |
| Healthcare understanding        | High 100%           |                    |         |         |
| Healthcare knowledge            | High 100%           |                    |         |         |
| Healthcare skill                | High 100%           |                    |         |         |
| Healthcare ability              | High 100%           |                    |         |         |
| Healthcare talent               | High 100%           |                    |         |         |
| Healthcare potential            | High 100%           |                    |         |         |
| Healthcare capacity             | High 100%           |                    |         |         |
| Healthcare power                | High 100%           |                    |         |         |
| Healthcare influence            | High 100%           |                    |         |         |
| Healthcare authority            | High 100%           |                    |         |         |
| Healthcare expertise            | High 100%           |                    |         |         |
| Healthcare competence           | High 100%           |                    |         |         |
| Healthcare proficiency          | High 100%           |                    |         |         |
| Healthcare mastery              | High 100%           |                    |         |         |
| Healthcare excellence           | High 100%           |                    |         |         |
| Healthcare perfection           | High 100%           |                    |         |         |
| Healthcare flawlessness         | High 100%           |                    |         |         |
| Healthcare impeccability        | High 100%           |                    |         |         |
| Healthcare precision            | High 100%           |                    |         |         |
| Healthcare accuracy             | High 100%           |                    |         |         |
| Healthcare exactness            | High 100%           |                    |         |         |
| Healthcare correctness          | High 100%           |                    |         |         |
| Healthcare rightness            | High 100%           |                    |         |         |
| Healthcare appropriateness      | High 100%           |                    |         |         |
| Healthcare suitability          | High 100%           |                    |         |         |
| Healthcare appropriateness      | High 100%           |                    |         |         |
| Healthcare suitability          | High 100%           |                    |         |         |
| Healthcare appropriateness      | High 100%           |                    |         |         |

|      |  |     |
|------|--|-----|
| 4401 | HVDGETPTLDNFMELCSYFYFLFPMHRLQLRFNHTAGTPYLYRFFDFS       | 450 |
| 4401 | HVTGETPTADNFMDFLCSHIYFWFPMHRLQLRFNHTSGTPVLYRFFDFS      | 450 |
| 4451 | EEIINPYRIMRFGRGVKGVSHADELTYLFWNILSKRLLPKESREYKTIERM    | 500 |
| 4451 | EDLINPYRIMRSGRGVKGVSHADELTYFFWNQLAKRMPKESREYKTIERM     | 500 |
| 501  | VGIWTEFFATTGKPYSNIDIAÇMENLTTWDPİKKSSDDVYKCLNİGDELKVMDS | 550 |
| 501  | TGIWIQFATTGNPYSEİEGMENVSWDPIKKSDDEVYKCLNISDELKMİDV     | 550 |
| 551  | PEMDKIKQÇASIİFDKKKELF                                  | 570 |
| 551  | PEMDKIKQWESMFEEKHRDLF                                  | 570 |

FIG. 2B

```
SEQ ID NO:14
1  ATGACTTTTCTGAAGCAATTCAATATTTCGCCCTGAAACTATGCTTTAAATGCATGGTCAAT 60
   - - - - - + - - - - - + - - - - - + - - - - - + - - - - - +
   TACTGAAAAGACTTCGTTAAGTATAAAGCGGACTTTGATACGAAATTTACGTACCAGTTA
   M T F L K Q F I F R L K L C F K C M V N -

SEQ ID NO:13
61  AAATACACAAACTACCGTCTGAGTACAAATGAAACCCAAATAATCGATACTGAATATGGA 120
   - - - - - + - - - - - + - - - - - + - - - - - + - - - - - +
   TTTATGTGTTTGTATGGCAGACTCATGTTTACTTTGGGTTTATTAGCTATGACTTATACCT
   K Y T N Y R L S T N E T Q I I D T E Y G -

121  CAAATTAAGGGTGTAAAGCGAATGACCGTCTACGATGATTCTTACTACAGTTTCGAGAGT 180
   - - - - - + - - - - - + - - - - - + - - - - - + - - - - - +
   GTTTAATTCCCAATTCGCTTACTGGCAGATGCTACTAAGAATGATGTCAAAGCTCTCA
   Q I K G V K R M T V Y D S Y Y S F E S -

181  ATACCCATATGCTAAGCCTCCAGTGGGTGAGTTGAGATTCAAGGCACCCAGCGCCTGTA 240
   - - - - - + - - - - - + - - - - - + - - - - - + - - - - - +
   TATGGGATACGATTTCGGAGGTCAACCCACTCAACTCTAAGTTCGGTGGGTGCGCCGACAT
   I P Y A K P P V G E L R F K A P Q R P V -

241  CCATGGAGGGGTGTACGTGATTGCTGTGGGCCAGCCAACAGATCGGTACAGACAGATTTC 300
   - - - - - + - - - - - + - - - - - + - - - - - + - - - - - +
   GGTACCCCTCCACATGCACATAACGACACCCCGGTCGGTTGTCTAGCCATGTCTGTCTAAAG
   P W E G V R D C C G P A N R S V Q T D F -

301  ATAAGTGGCAAACCCACAGGTTCCGGAGGATTGTCTATACCTGAATGTGTATACCAATGAC 360
   - - - - - + - - - - - + - - - - - + - - - - - + - - - - - +
   TATTCACCGTTTGGGTGTCCCAAGCCTCCTAACAGATATGGACTTACACATATGGTTACTG
   I S G K P T G S E D C L Y L N V Y T N D -
```

FIG. 3A

361 TTGAACCCAGACAAAAAGCGTCTCTGTTATGTTTTCATCCATGGCGGAGATTTTATTTTC  
 420  
 AACTTGGGTCTGTTTCCGCAGGACAATACCAAAAGTAGGTACCGCCTCTAAAAATAAAG  
 L N P D K R R P V M V F I H G G D F I F -  
 481 GCGAAGCAAAATCGTAACCTGGTTTGGTCCCAGCTACTTTATGAAGAAACCCGTGGTCTTG  
 480  
 CCGCTTCGTTTAGCATTGACCAACCAAGGCTGATGAAATACTTCTTTGGGCACCCAGAAC  
 G E A N R N W F G P D Y F M K K P V V L -  
 541 GTAACCGTGCAATATCGTTTGGGTGTGTTGGTTCCTTAGCCTGAAATCGGAAAATCTC  
 540  
 CATTGGCAGCTTATAGCAAAACCCACACAAACCCAAAGGAATCGGACTTTAGCCTTTTAGAG  
 V T V Q Y R L G V L G F L S L K S E N L -  
 601 AATGTCCCGGCAACGCTGGCCTCAAGGATCAAGTAATGGCCTTGAGATGGGTCAAGAGT  
 600  
 TTACAGGGGCCGTTGCGACCGGAGTTCCTAGTTCATTACCGGAACCTCTACCCAGTTCTCA  
 N V P G N A G L K D Q V M A L R W V K S -  
 661 AATATTGCCATTTTCGGTGGCGATGTAGACAAATATTACCGTCTTCGGCGGAAAGTGTGGT  
 660  
 TTATAACGGTAAAAGCCACCGCTACATCTGTATAATGGCAGAAGCCGCTTTCACGACCA  
 N I A I F G G D V D N I T V F G E S A G -  
 720 GGGGCTCAACCCATTACATGATGATAACCGAACAGACCCGTGGTTTATTCATCGTGGT  
 661  
 CCCCCGAGTTGGGTAATGTACTACTATTGGCTTGTCTGGGCACCAATAAGGTAGCACCA  
 G A S T H Y M M I T E Q T R G L F H R G -

FIG. 3B

```

721 ATCATGATGTCCGGTAATTCCATGTGCTCATGGCCCTCTACAGAATGCCAAAGTCGTGCG 780
-----+-----+-----+-----+-----+-----+-----+
TAGTACTACAGGCCATTAAAGGTACACGAGTACCCGGAGATGTCTTACGGTTTCAGCACGC
I M S G N S M C S W A S T E C Q S R A -

781 CTCACCATGGCCAAACGTGTGGCTATAAGGGAGAGGACAAATGAAAAGATATCCTGGAA 840
-----+-----+-----+-----+-----+-----+-----+
GAGTGGTACCGGTTTGCACAACCGATATTCCTCTCCTGTACTTTTCTATAGGACCTT
L T M A K R V G Y K G E D N E K D I L E -

841 TTCCTAATGAAAGCCCAATCCCTATGATTTTGATCAAAAGAGGAGCCACAAAGTTTGCACACC 900
-----+-----+-----+-----+-----+-----+-----+
AAGGATTACTTTCGGTTAGGGATACTAACTAGTTTCTCCTCGGTGTTCAAAACTGTGGG
F L M K A N P Y D L I K E E P Q V L T P -

901 GAAAGAAATGCAAAATAAGGTCAATGTTTCCTTTTGGACCCCACTGTAGAACCATACCAGACA 960
-----+-----+-----+-----+-----+-----+-----+
CTTCTTACGTTTATCCAGTACAAAGGAAACCTGGTGACATCTTGGTATGGTCTGT
E R M Q N K V M F P F G P T V E P Y Q T -

961 GCCGACTGTGTGTACCCAAACCAATCAGAGAAATGGTGAAGAGCGCCTGGGGAAATTCG 1020
-----+-----+-----+-----+-----+-----+-----+
CGGCTGACACACCATGGGTTTGGTTAGTCTCTTTACCACTTCTCGCGGACCCCTTTAAGC
A D C V V P K P I R E M V K S A W G N S -

1021 ATACCCACATTGATAGGCAATACCTCCTACGAAGTTTGTCTTCCAAATCAATTGCCAAA 1080
-----+-----+-----+-----+-----+-----+-----+
TATGGGTGTAACACTATCCGTTATGGAGGATGCTTCCAAACGAAAGTTTAGTTAACGGTTT
I P T L I G N T S Y E G L L S K S I A K -
  
```

FIG. 3C

CAATATCCGGAGGTGTA AAAAGAGTTGGAATCCTGTGTGAATTATGTGCCTTGGGAGTTG  
-----+-----+-----+-----+-----+  
GTTATAGGCCCTCCAACATTTTCTCAACCTTAGGACACACTTAATAACGGAACCCCTCAAC  
1081

Q Y P E V V K E L E S C V N Y V P W E L -

GCTGACAGTGAACGCAGTGCCCCCGAAACCCTGGAGAGGGCTGCCATTGTGAAAAAGGCC  
-----+-----+-----+-----+-----+  
CGACTGTCACTTGCGTCACGGGGCCCTTTGGGACCCTCTCCGACGGTAACACTTTTTCGGG  
1141

A D S E R S A P E T L E R A A I V K K A -

CATGTGGATGGGGAAACACCTACTCTGGATAATTTTATGGAGCTTTGCTCCTATTTCTAT  
-----+-----+-----+-----+-----+  
GTACACCTACCCCTTTGTGGATGAGACCTATTAAAATACCTCGAAACGAGGATAAAGATA  
1201

H V D G E T P T L L D N F M E L C S Y F Y -

TTCCTCTTCCC CATGCATCGCTTTCCTACAATTGCGCTTCAACCCACACAGCTGGCACTCCC  
-----+-----+-----+-----+-----+  
AAGGAGAAGGGTACGTAGCGAAGGATGTTAACGCGAAGTTGGTGTGTCGACCGTGAGGG  
1261

F L F P M H R F L Q L R F N H T A G T P -

ATTATTGTATCGTTTCGATTTCGATTCCGGAAGAAATTATTAACCCCTATCGTATTATG  
-----+-----+-----+-----+-----+  
TAAATAAACATAGCAAAGCTAAAGCTAAGGCTTCTTTAATAATTGGGGATAGCATAATAC  
1321

I Y L Y R F D F D S E E I I N P Y R I M -

CGTTTGGCCGTGGCGTTAAAGGTGTAAAGCCATGCCGATGAGCTAACCTATCTCTCTGG  
-----+-----+-----+-----+-----+  
GCAAAACCGCACCGCAATTTCCACATTCGGTGACGGCTACTCGATTGGATAGAGAAGACC  
1381

R F G R G V K G V S H A D E L T Y L F W -

FIG. 3D

[illegible]

3E  
G.  
H  
H



|        |       |       |     |  |     |
|--------|-------|-------|-----|--|-----|
| SEQ ID | NO:15 | MdαE7 | 97  | QTDFISGKPTGSEDCLYLNVTNDLNPDKKRPMVFTHGGGFIFGEANRN     | 146 |
|        |       |       |     | .    |     |
| SEQ ID | NO:43 | LcαE7 | 97  | QVDFITGKVCGSEDCLYLSVYTNNLPETKRPVLVIHGGGFIIGENHRD     | 146 |
|        |       |       |     | .    |     |
|        |       |       | 147 | WYGPDIYFMKKPVLVTVOYRLGLVGLSLKSENINVPGNAGLKDDQVMALR   | 196 |
|        |       |       |     | .    |     |
|        |       |       | 147 | MYGPDYFIKKDVVLINIQYRLGALGFLSINSEDLNVPGNAGLKDDQVMALR  | 196 |
|        |       |       |     | .    |     |
|        |       |       | 197 | WFKSNIATFGGDVDNITVFGESAGGASTHYMMITEQTRGLFHRGIMMSGN   | 246 |
|        |       |       |     | .    |     |
|        |       |       | 197 | WIKNNCANFGGNPDNITVFGESAGAASTHYMMLTEQTRGLFHRGILMSGN   | 246 |
|        |       |       |     | .    |     |
|        |       |       | 247 | SMCSSASTEÇQSRAITMAKRVG YKGEENEKDILEFLMKANPYDLIKEEPQ  | 296 |
|        |       |       |     | : .: .: .: .: .: .: .: .: .: .: .: .: .: .: .: .: .  |     |
|        |       |       | 247 | AICPLANTQCQHRAFTLAKLAGYKGEDNDKDVFLEFLMKAKPPQDLIKLEEK | 296 |
|        |       |       |     | .    |     |
|        |       |       | 297 | VLTPERM  | 303 |
|        |       |       |     | . . . .  |     |
|        |       |       | 297 | VLTLEER  | 303 |
|        |       |       |     | . . . .  |     |

FIG. 4.